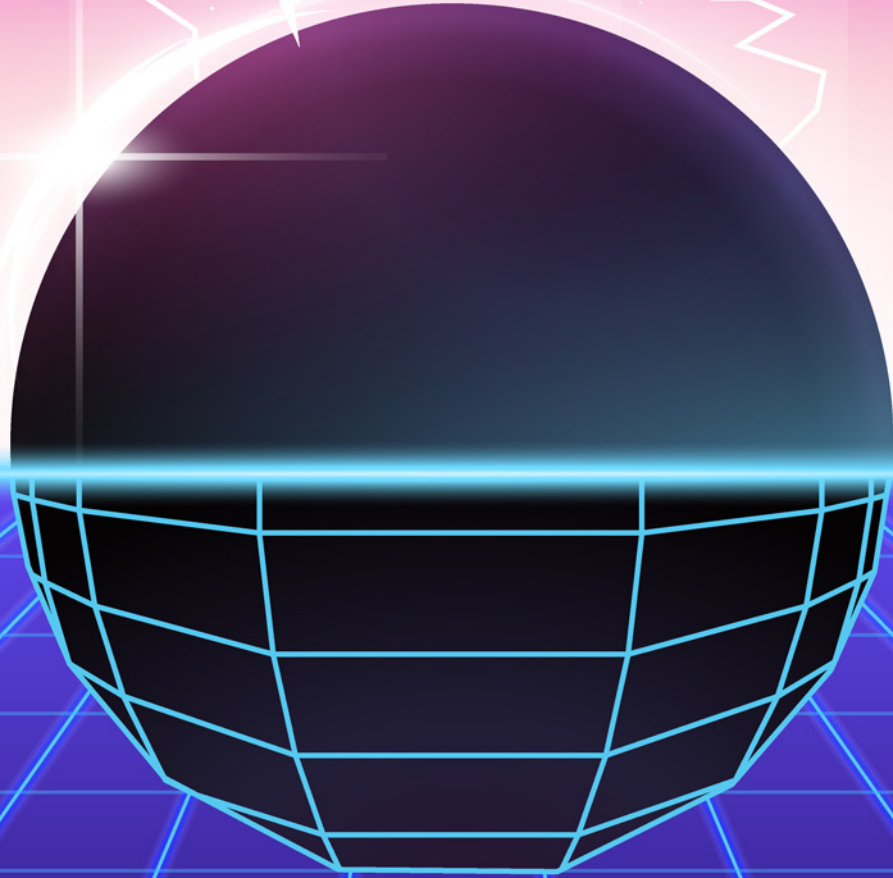


KILOBYTE

MAGAZINE

2017 / 3

50 YEARS OF LOGO · VIRTUAL REALITY ON THE C64 · MAKING GAMES ON THE ATARI 2600
PROGRAMMING THE 2650A · NOX ARCHAIST (APPLE II) · SAM'S JOURNEY (C64) · AND MORE



8BIT
ONLY

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Photo: Volker Rust

There are nice covers in your diskbox as well – we're sure of it! Please send your scans or photos to: kilobytemag@gmail.com

VERY ACCURATE

In late 1978, Kybe Corp. from Massachusetts expanded their Accutrack product family by adding cassettes, magnetic cards, 8 inch and 5,25 inch floppy disks. Their advertises in 1983 claimed: "Is this level of reliability

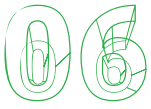
really necessary?" Their quality must have been quite good as they were selling OEM disks to several other companies. However, they were sold primarily in the US and much less in Europe. In July 1986, they closed their business. (bk)

THERE HAVE TO BE RAINBOWS

There is not much known about the manufacturer of MTK diskettes, so let's just enjoy the looks of it: During the early till mid-1980s, you had to have some rainbows in your logo to show off some color. Activision did it, Commodore did it, so why not go with the trend and put some shiny colors on your floppy disk cover? It's round, reminding you that inside a disk is spinning. But

other than that, there is simply no connection to the Minidisk. Neither is the cookie inside colored (that would have been nice - never saw that on any disk though), nor is the outside colored. A Silver sleeve and a rainbow ... maybe the makers of this disk were just fans of Genesis. Silver Rainbow anyone? Well, we don't know for sure. Maybe you have some more information about this company? (bk)





LOGO

50 YEARS: MORE THAN A CHILD'S GAME



Commodore 64 LOGO Software box cover. Scan & restoration : bk

» ***The main purpose of LOGO is not to have a better understanding of computers. It is to have, through computers, a better understanding of everything else.***

Seymour Papert

In 1967, computers were large machines, used only by big corporations and government agencies. They were far too big for home use. And why would anyone want a computer at home anyway, right? But right there, two years before the first man walked on the moon and one year before 2001 hit the cinemas, Seymour Papert and his team thought about how children could easily learn how to program a computer. They knew: someday computers would eventually get smaller. And they had no doubt that there was use for them at home. And that it would be important for children at a young age to be able programming them. It was an astonishing thought at the time.

IT ALL BEGAN WITH A TURTLE_____

So how could children be motiva-

ted to program, and what should a language aimed at them look like? Papert and his team thought about all the complex instructions necessary to make a machine do what man wants. There had to be a different approach. So they came up with an idea: What if a computer could process commands like a dog? What did a computer have to do to look friendly? So they created an input environment very much like something you could come up with if you would think of how to give written commands to your pet. Instead of a cursor, a turtle was waiting onscreen for input. „Children gradually learn through experience, which for me means thinking about and talking about what you do, as much as doing in the hands-on sense“, says Papert in his very own LOGO teaching course published by Media

Microworlds. This means that they need to associate numbers with turns and distances. That what they see onscreen makes it easy for them to comprehend what they do - and what they need to do next. They encounter phenomena like wrapping, „something you need to understand by playing with the computer“, Papert says. By giving commands to the little turtle and watch it follow them through, children can learn a great deal about geometry and how a computer works, before stepping up to more capable programming languages like BASIC.

LOGO FOR EVERYONE

With home computers becoming readily available for everyone during the 1980s, LOGO was ported to nearly every single one of them: There was Atari Logo, Apple Logo, Color Logo for Tandy, Commodore Logo, Hot-Logo for MSX, Texas Instruments Logo, Dr. Logo for Amstrad CPC, Acornsoft Logo and many, many more. But it all started with versions for the Apple II and Texas Instruments. To further spread the use of LOGO in education, Papert founded Logo Computer Systems in 1980. With schools switching to Apple and IBM compatibles during the mid-80s, Logo got more enhanced. Different turtles could be programmed to do different tasks at once. A great step forward towards more complexity. And it continued its successful career in education. For example in England, where

Logo became a mandatory part of the national curriculum. During the 90s, the programming language saw its demise. However, it didn't vanish and spawned a few forks that are still in use today. And so is the legacy of Seymour Papert. „When I think of learning LOGO, I like it to be supported by the learners culture. This is the only way it can be solidly learned. But I also like it to enrich, to enlarge the learners culture. This is the only way it can be meaningfully learned. The main purpose of LOGO is not to have a better understanding of computers. It is to have, through computers, a better understanding of everything else.“ (bk)

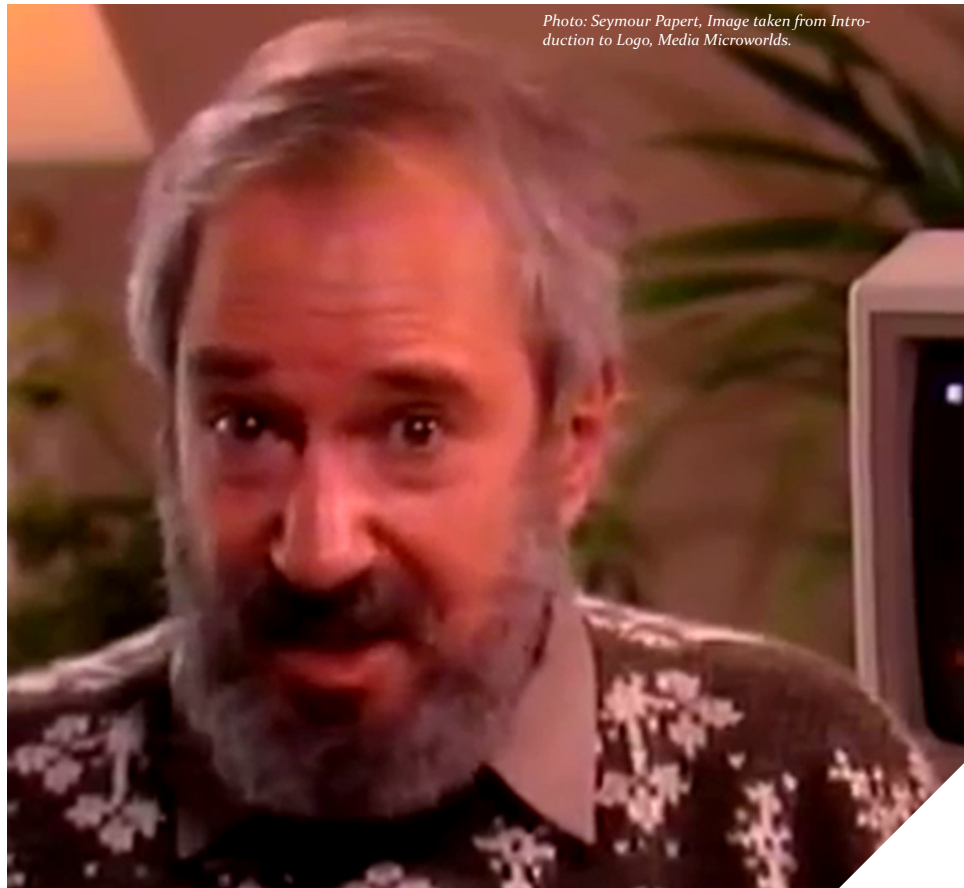


Photo: Seymour Papert, Image taken from Introduction to Logo, Media Microworlds.



Photo: Jim Happel

Jim Happel rediscovered his C64 a few years back and decided to do something with it besides playing games. And he wanted to use it in ways that it was never intended for. „So, it was natural that when I got interested in Virtual Reality, I had to do some kind of VR for the Commodore 64“, he says. And so he did. For this, he basically used a five inch LCD, some VR goggles and a video cable. „The VR64 is simply driven by the composite video output of the computer“, he explains. The LCD, which is mouned in the goggles, does the magic together with the software Jim developed: „The software displays an image for the left eye on the left side of the screen, and an image for the right eye on the right side of the screen. Subtle variations between the two eyes' images

create the 3D effect.“ The same effect is used with cardboard goggles and smartphones. They, too, display two seperate images that create the illusion of 3D graphics for our brain. „Almost all of the center two screen columns are blocked by the goggles, so this area is not used. Therefore, each eye only has an image of 152 x 200 pixels in high resolution, and only 76 x 200 in multicolor.“ And as the LCD had a wide-screen format, this helps stretching the viewing area horizontally so that each eye's view isn't too narrow.

IT'S ALL IN YOUR HEAD

The 3D effect works like this: „If an object (like a sprite) is in the same location in both, the left and the right view, it looks like it is a normal depth. If the object in both views

is moved towards the center of the goggles, the viewer sees the object at the original location, but it appears to be closer! I found I could do this reliably up to 10 pixels. This gives ten depths that can be used“, Jim says. „For the background graphics such as the buildings in the game, I thought through the spacing of the front of the building and the rear of the building and simply connected them. The viewers brain just resolves it all into a 3D view.“

So, basically speaking, your eyes trick you into thinking that what you see in front of you seems three dimensional. The brain processes both images and tries to make sense of them by merging the information, as it is used to, thus creating the desired illusion of 3D with only two dimensions.

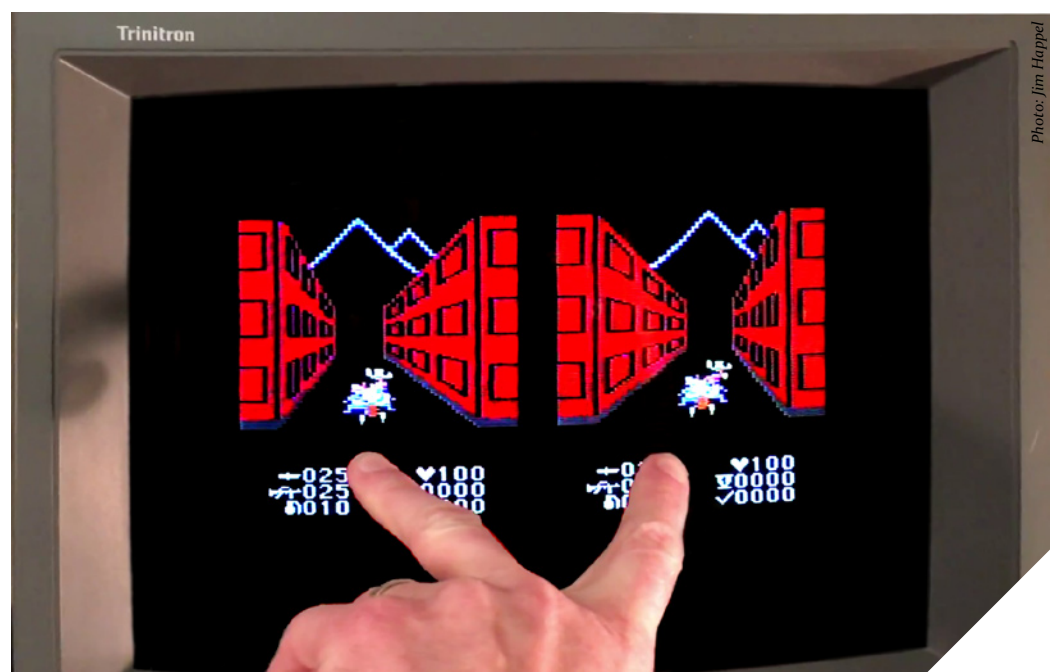
After having created the hardware and a very basic program to test it,

the question arose: Would it be possible to make a game that makes use of the effect?

GAME ON! _____

Jim knew that 3D scrolling routines would be too much for him to handle. But: „Since it is VR, I wanted to do a POV game. And what better than a first-person shooter?“, he asked himself. „So I settled on a scenario where you can rotate and look down four different streets and also see a corner view between them, for a total of eight views“, he explains. The game itself was inspired by old computer games as well as by Plants vs. Zombies. „Each enemy is easy to deal with individually, but when many attack at once, it gets hectic. I also came up with the idea that powerups could only be collected if you kill a flashing enemy when he is very close. This creates the tension

This is what „Street Defender“ looks like if played on a regular monitor. Playable, but the fun starts when you play in 3D, of course.



between waiting for the attacking enemy to get closer while not seeing what is happening in the other directions.“

After three months of programming, Jim finished the game design. The result is called „Street Defender“ and can also be played without the 3D goggles on your standard monitor. But where would be the fun in that, right? And „Street Defender“ might not be the only game we'll see for the VR64: „Prior to this, I did a Star Wars like X-Wing vs. Tie fighters game. This was really fulfilling my childhood dream of writing a video game about my favorite childhood movie. It has a very traditional layout with the X-Wing at the bottom and the Tie fighters diving at you. Since it was my first assembly game, I kept it very simple, just eight sprites on the screen at once. The guys on Lemon64 really helped

me along on this one. But, I never released it. I just need to tune the attacking waves, but I got busy on Street Defender!“ Now that that's out of the way, we hope that he will finish this one soon, too.

IT'S OBVIOUSLY FUN TO PLAY _____ „During the game development, I kept questioning if a 3D C64 game was really such a fun idea. But when I'd run the game on real hardware with the VR64 goggles, I was always convinced and excited again.“ To test how others would react to his device, he showcased it at some vintage computing events. „When I brought three VR64 setups to the ECCC 2017 and VCFMW 12 show, I was concerned I went overboard. But those machines were in use much of the show and often all three at once“, he remembers. So although they will certainly not replace

Inside the VR64 is just a five inch LCD. The magic happens when you load the software and put the goggles on.



Photo: Jim Happel

traditional 2D games, Jim Happel thinks it could develop into a nice little niche inside the community. „I think demos would be amazing on the VR64. This would give a whole different set of challenges and experiences. I can't wait to see the first one!“ As for more games, Jim will take his time. „I have a few ideas, but I am still recovering from the mad rush to get this all ready for the show! I am sure I will do something else and would be happy to work with others who want to do the same.“

THE FUTURE OF VR64

So what will the future bring for Commodore enthusiasts that are willing to step into VR gaming? „Lots of people have asked about adding motion tracking to the VR64. I am sure it could be done technically. However, it certainly would complicate the software if it is to react to the heads rotation, let alone pitch. I really like the idea of the VR64 being a simple replacement for the monitor and also looking like a

product we wish was on the market back in the mid 1980s.“ As for improvements, Jim would welcome it if someone updated the video signal from composite to S-Video. „I know the community figured out how to modify an LCD module to accept S-Video, and used these as replacements for the SX-64 CRTs. Perhaps the same techniques could be used here?“

HOW TO GET ONE

So now we got you interested, you might wonder where to get one?

Well, Jim explains how he built his in his blog over here.

He did also make a limited run of VR goggles ready to use and sold them together with his game on disk and tape. Yes, on tape! You can't go any more anachronistic than playing a VR game on a C64 that loads from tape! How amazing is that? If you're lucky and nice, maybe Jim will build some more. Take a look at the thread in the Lemon64 forum here.

(bk)

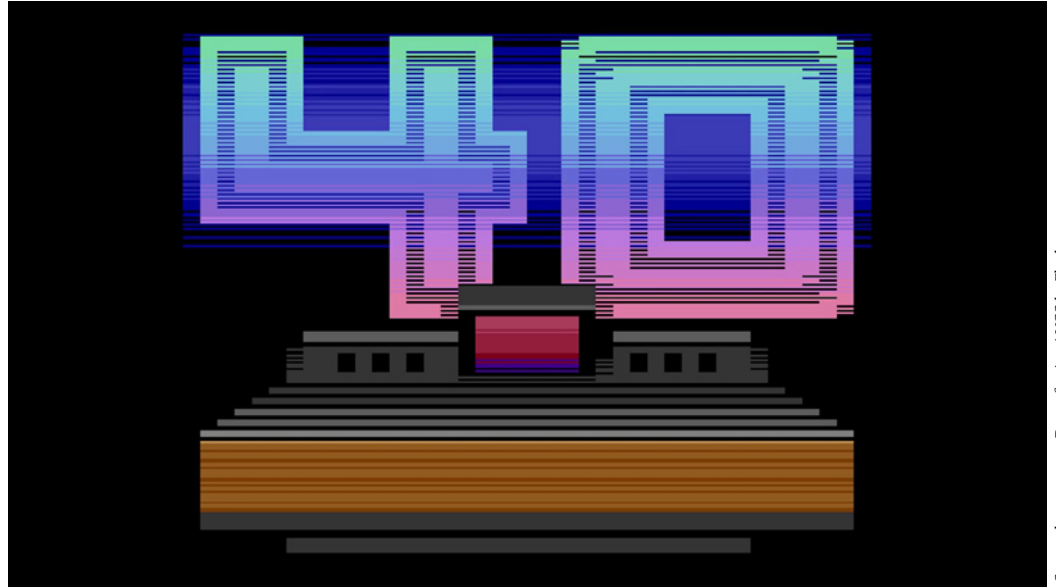


„Street Defender“ on disk and on tape. Nothing says „I'm on the hype train“ better than playing a VR game on an 8bit machine and load it from tape.

MAKING GAMES FOR THE ATARI 2600



The cover artwork resembles the look of computer books from the eighties and early nineties.



Screenshot: 40 years Demo for Atari VCS by Flush.

Did you own an Atari 2600 when you were young? Or did you ever dream about programming your own games for it? If so, then now is the perfect time to learn how to do so. In December 2016, nearly forty years after the Atari 2600's North American debut, author and developer Steven Hugg published a book called "Making Games for the Atari 2600."

The book addresses readers who have few-to-none experiences with programming in assembly language or the inner workings of the 2600. So it starts off with an introduction to bits and bytes, and the MOS 6502 microprocessor. Step by step each chapter teaches you new things you'll need to know for making your game ideas come true. Like many other materials, it uses the official mnemonics from Atari's Stella Programmer's Guide and the DASM assembler syntax. Most of the code snippets featured are annotated;

black and white screenshots, tables and diagrams will support you throughout the book.

It also provides a free online IDE at 8bitworkshop.com which you can use to easily check your progress in real-time. It features all examples from the book, an editor with syntax highlighting, debugger and an Atari emulator. Of course its use isn't mandatory. If you want to use your local tools instead, feel free to do so.

CONCLUSION

While it's not superior to the Stella Programmer's Guide or the other materials that can be found out there, it's nonetheless a well written addition and worth to be read. It may not cover everything with extreme detail and misses a few technical aspects (e.g. differences between 6502 and 6507), but it's still sufficient enough to accompany you on the road to your first 2600 game.

(mk)

SCENE WORLD



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A close look at the inside of the Signetics 2650A chip. Its instruction set consists of 75 instructions: 40 percent for arithmetic instructions, 30 percent for branch instructions and another 30 percent for I/O instructions and for performing operations on the two status registers.

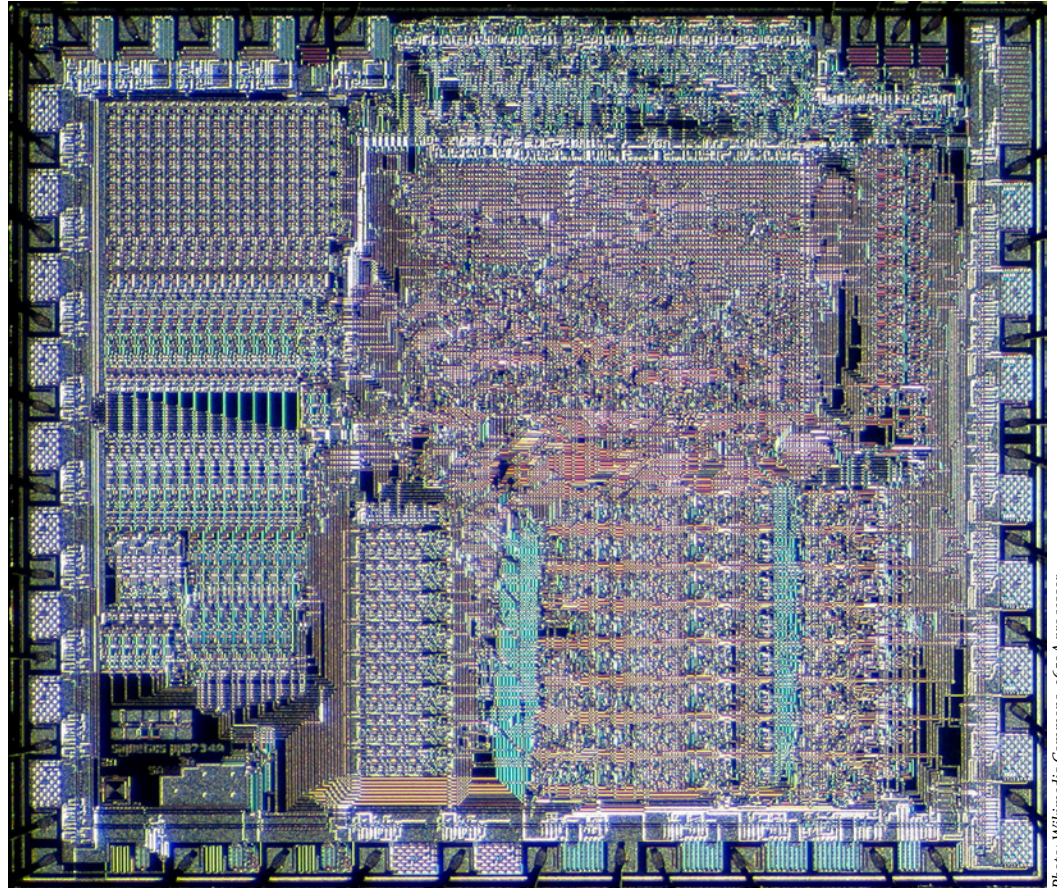


Photo: Wikimedia Commons, 2650A processor

Everyone can program the 6502 or the Z80. They were the mainstream 8bit processors during the late seventies till the mid nineties. But the Signetics 2650A was a different breed. It was released in 1975 and found its way in some arcade machines, like the Atari Quiz Show. But it due to its cheap price, it also got used in some home video game consoles such as the Emerson Arcadia 2001 in 1983, and the Interton VC4000 before that in 1978. The CPU could address up to 32KB or RAM, which seemed enough for the rest of the seventies and early eighties. It allowed for very limited games that are comparable to the very first Atari VCS games, but the

capabilities of the Signetics CPU came quite fast to an end. There simply are no hardware sprites, there is no hardware scrolling - basically, it is quite good to make a decent pong console. To port games like Flappy Bird or Canabalt on a machine like the Interton VC4000 requires some healthy masochistic attitude and the absolute will to do it because you can. That description may also fit to Simon Augustin who did exactly that: He ported Canabalt to the Interton and found his way around with the 2650A CPU. „Half of the code is necessary to cope with the weaknesses of the hardware“, explains Simon in his game code. If you know Canabalt, then you know

that it's a fast-paced game, which falling bombs and desintegrating buildings. That would be too much for the little 2650. But it can pull off the basic game quite well. And Simon found a trick to give us the illusion that the screen actually scrolls – which it does not. He uses sprites for the buildings: Three sprites move eight pixels to the left. After that, the whole graphic gets shifted to the right and the sprite movement begins anew. This is a really clever design that pushes the CPU in the Interton to its limits, as there is also a score continuously increasing and sounds being output. So there is a lot happening and quite a decent speed, which leaves virtually no rastertime left for anything else like a spaceship flying in the background, earthquakes or desintegrating buildings. All things that Simon would like to add, but can't. And to be honest, there is no need to, as the game is quite playable and challenging the way it is.

So if you wanted to start programming the 2650A, there are some manuals to be found on the web. It is a rather exotic processor to code for and you'll address a very small user base. But the difficulty may be the fun of it for some – as it was for Simon Augustin.

If you want to test your code without any hardware, there are emulators for the Emerson Arcadia out there (like WinArcadia or Tunix2001) that do support the Interton VC4000 as well. You may want to try them out.

And if you do so, maybe you test your very first code on the 2650 with these lines:

```
LODI, r0 $0E
STRA, r0 $1FC6
```

Doesn't look too impressive now, does it? Well, it isn't. The first line just puts \$0E into register zero. The second line saves the value of register zero at location \$1FC6, which is the PVI register of the background color. The screen turns yellow. So what would you need to change to fill the background in a different color?

You'll learn a lot by taking a close look into the source codes for Flappy Bird and Canabalt Simon documented on his website right here.

(bk)

Canabalt running on a real Interton VC4000 hardware connected to a Siemens TV from the late 60s.



Sam's Journey was released on Christmas evening 2017 by Proto-vision.



It was in February 2015 when we first heard about Sam's Journey for the Commodore 64. Since then, the developer staff from Knights of Bytes worked hard to make the game reality. And now, more than two and a half years later, we can finally enjoy the fabled Jump'n'Run. So what can

you expect of it? Well, to start with: Have you ever played any game from Chester Kollschen, maybe Ice Guys or Metal Dust? Then you know how hard those games can be. And Sam's Journey is no exception. However, it gives players a helping hand that's very nice to have. And it's also quite

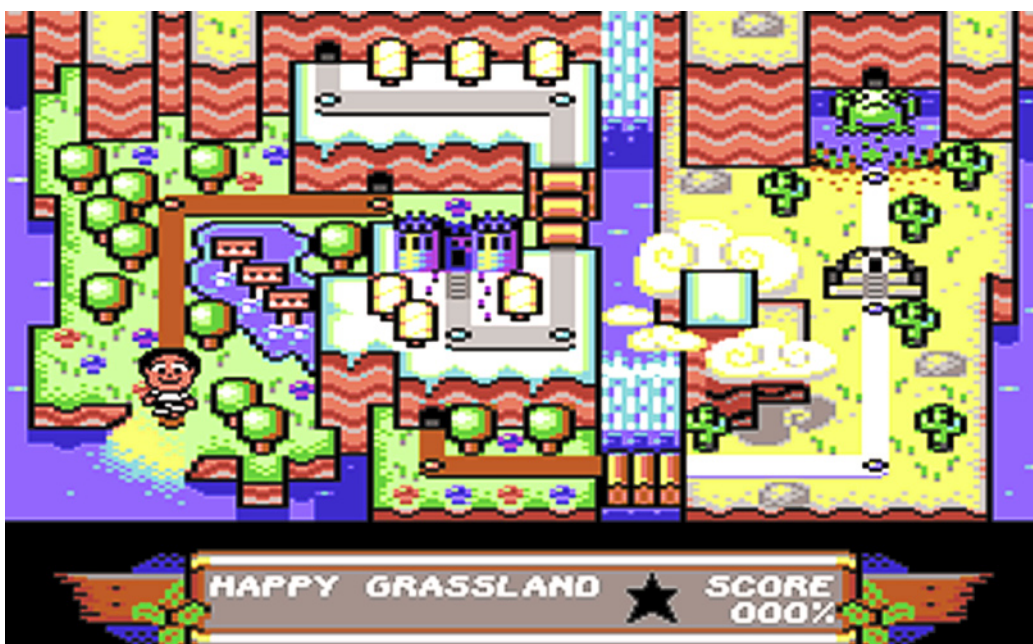


rare to find in C64 games: You have unlimited lives. In fact, you don't have lives at all, as you can always restart a level completely or begin from the last checkpoint. And this is a big relief, as you will quite frequently die in this game. But more on that later. First of all, let's look at what we have here – and what makes this game so special on any 8bit platform.

TECHNICS

Sam's Journey looks amazing. It could very well have been a game for the NES: the smooth multi-directional scrolling, the precise control of your player sprite: Everything fits together nicely and adds up to an astounding package on the C64. For decades, there simply was no game like Super Mario Bros. 3 on the breadbin – or any other 8bit machine for that matter. There was Giana Sisters, yes, but it was mere-

ly mimicking the first Super Mario Bros. With Sam's Journey, you can very well see where Chester got his inspiration: A nice and animated level map, a castle which you have to beat to proceed to the later levels, lots of different costumes that come along with special abilities for your character, and a control that's only matched by Jump'n'Runs on 8bit consoles, not home computers. Everything looks and feels incredibly polished. And that was just the floppy disk version. But Sam also achieved a technical first on the C64: The cartridge version allows players to save on the cart itself! This is possible due to a special design by Jens Schoenfeld from Individual Computers. It contains 4 Megabits of ROM for the game itself and an additional 2 Kilobyte of storage for savegames. 1541Ultimate users will have to wait for an update to use this feature with their crt-file. However, the d64



Looks familiar? This level map is obviously inspired by Super Mario Bros. 3 on the NES.

images you get with your order work perfectly fine on the 1541U.

NTSC users will need to plug in their REU to play the game. The reason for this is that on those machines, there is less processing power per frame available. Moreover, the higher update rate per second (60 instead of 50) has to be maintained in order to keep the scrolling nice and smooth. As the REU does have DMA capabilities, it can help to relieve the CPU with those tasks. And also, it brings along additional RAM, which always helps. PAL users can use their stock C64. However, it is important to know that you have to detach any second floppy drive or user port peripherals in order for Sam to run. If you play on the 1541U, remember to switch off your virtual printer, or else it won't work either. SD2IEC users won't be able to enjoy the game on their device, as the new fastloader is not compatible with it.

If you happen to own a JPX adaptor and can use controllers with more than one button, you can also use the second fire button for jumping instead for pressing up.

GREAT INSPIRATION

Usually when a game borrows gameplay ideas from another one, it can go wrong in many ways. But Sam takes all the great things from Super Mario Bros. 3 like the control, the smooth and fast scrolling and the clever level design and level-map, and transforms it into a great experience on the C64. However, there are even more influences from NES games that you can detect. For example at the very beginning, after Sam gets pulled into his wardrobe, he falls down a long way before spashing into the water and using the first door to enter his new world. This bears a strong resemblance to the opening of Super Mario Bros. 2.

When Sam wears his pirate costume, he swings his sabre like a true buccaneer. It's a great costume on many occasions, but not all.



Elephantastic: Even large enemies like this one look just great and are very well made.



Wasps ... you are going to hate all wasps in this game. Not that they are all cute and cuddly in the real world, but still.

The icy worlds are quite slippery. But as vampire, Sam can fly some distances and thus circumvent some critical situations.



As do all the doors, even the locked ones and the way Sam handles the key for them, throughout the game. And if you are searching for a comparison for the enemies and the quite complex ways some of them behave, take a look at Kirby's Dreamland on NES. But because

Sam gets its inspiration from all the right places, it manages to be a great game of its own.

SUPERB GRAPHICS

Sam is so colorful, the backgrounds are drawn so lovely and the little enemies are so cute that you can't

He's not Babe Ruth, but he does the job: In his baseball costume, Sam can aim and throw things quite precisely.



help but fall in love with this world. Never, since Mayham in Monsterland, has there been a game that uses the limited color palette of the breadbin that well. It really creates the illusion that there are plenty of colors onscreen. And Sam himself, being made from an overlay of a hires outline sprite with a multicolor sprite filling the gaps, looks just as great as everything else. He is also very well animated and you can tell that a lot of workhours just went into his design in all his different costumes.

PLAYABILITY

This game has a continuously increasing difficulty. While in level one and two you have time to get fami-

liar with the control and the quite easy enemies that can be beaten by jumping on their head, level three just shows you what else there is to know: At some points, you won't be able to progress if you don't have the right costume. And despite Sam's pirate dress comes in handy on many occasions, it's not the matchwinner in every way. There really is no such thing as the one right costume, and even though you often get the right ones just before entering the next area where they might be needed, the game also sometimes offers you the chance to get another one, which you might prefer, only to let you know after the next door that you would have needed the other one. However, you can go back in most



This is what you get when you buy Sam's Journey, either on cartridge or on two floppy disks (both sides recorded).

cases, and pick the one needed. Nice: The enemies you killed won't return to haunt you. However, there are enemies that can't be killed. Some of the wasps, for example. Oh, the wasps ... you will learn to hate them all! However, in the case that you find yourself stuck in a level, you can always press space and begin it anew. Or go back to the last checkpoint and try again. The concept of unlimited lives (without using a cracked version of a game) is quite a modern gaming experience, and it's been a pretty darn good decision to give it a try on this game. With limited lives, you would have to repeat all the easy levels again as soon as you failed in a difficult one. And here is what Sam does better than Super Mario Bros. 3, where you can run out of lives and get thrown all the way back to the beginning. With Sam, you won't encounter such a frustrating situati-

on – which is great if you want to get younger audiences to play the game as well. And it gives you enough motivation to try a level again when you learnt how to master it – and also to revisit it, maybe with the right costume – to collect all the diamonds, coins and chalices in them to make them 100 percent complete (another great inspiration from Kirby, by the way).

MUSIC

It's always difficult to compose a soundtrack for a game that fits, or even stands out. But Alex Ney did a great job here. You can find yourself humming some tunes as they are that catchy. And they are very upbeat, happy and motivating. The sounds are also very well chosen, however you can hear some inspiration from SMB3 here, too. Like the sound Sam makes when he abruptly turns around at a fast pace. Or the sounds

The doors and keys look like they would fit perfectly into Super Mario Bros. 2 on NES as well.





Those ants take two hits before they die. The owls however are harmless and serve as jumping platforms for Sam.

for selecting something. They are, amongst some others, pretty close to those of the NES Mario game. But that doesn't disturb at all, you'll just notice it and it will make you smile.

ALL IN ALL _____
If you had a time machine and could have published this game back in

1992 for the C64, it would have been a system seller for sure. Today, it still stands out and is one of the best games of all time on this machine. It's a must-play for every breadbin owner and will certainly make NES enthusiasts turn their heads and look at this one. A great game, worth every penny. (bk)



You thought you were already beyond the ice palace? Well, you're not!

Those are some nice looking feelies, don't you think? Nox Archaist certainly knows what a good RPG should bring along.



Photo: 6502 Workshop

Normally, we would not mention games that are not yet finished. However, it's different with Nox Archaist, a RPG for the Apple II that even Ultima-creator Lord British himself, Richard Garriott, seems to be waiting for. After the Kickstarter brought in less than half of what the creators had in mind to make this game reality, they didn't give up and plan to relaunch the Kickstarter while continuously working on finishing the game. You see, when Lord British likes what you do, you have really no excuse to quit.

THOU SHALL PASS

Nox Archaist is a tile-based, 8-bit, sword-and-sorcery role-playing game modeled after the iconic RPGs of the 1980s like Ultima – and it

proudly shows. It is an open world game that leaves it to the player where to go and what to do. The fighting sequences are turn based. And much like the old RPGs of the day, you can assemble a party of up to six players. Behind this game are some very honorable programming veterans like Elizabeth Daggert, former lead programmer of Lode Runner Online, software developer Peter Ferrie and Chris Torrence, host of the Assembly Lines Video Podcast, to name a few. And their game will be huge: It will fit on four 5.25" floppy disks, recorded on both sides. Like Ultima, it will contain some great feelies like a woven map, some coins, a manual with hand-drawn graphics and more. The teams is growing every month

and they keep getting encouragement from other famous Apple II programmers as well, like Rebecca Heineman, creator of *The Bard's Tale III*. So what remains to be done to complete the game? Currently, the game dev status is pre-beta. Lead developer Mark Lemmert explains: „With a game engine that has core elements complete, the remaining game development work is mostly in the category of storyline and quest development.“ He adds: „While we have created a storyline

sketch, we've left it flexible enough that we can mold it to the contours of the game engine.“ So far, also some prototypes of the feelies have been made and are examined for production quality.

As for now, it remains uncertain when exactly the new Kickstarter campaign will launch. However, the team plans to have the game finished around December 2018. If they'll succeed, this is going to be a must-have for all Apple II-enthusiasts. (bk)



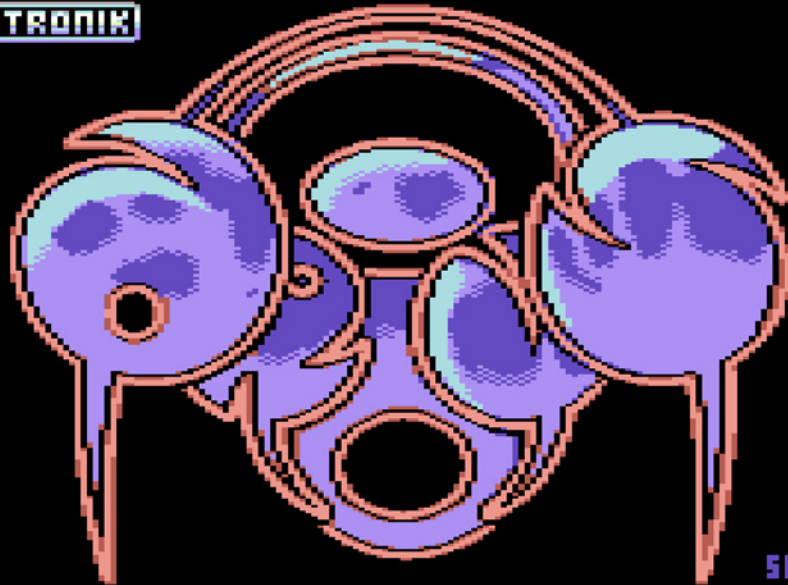
It's fighting time! One bandit archer down while some more enemies are still left. The combat is turn based like in Ultima.



ARGUS (C64)

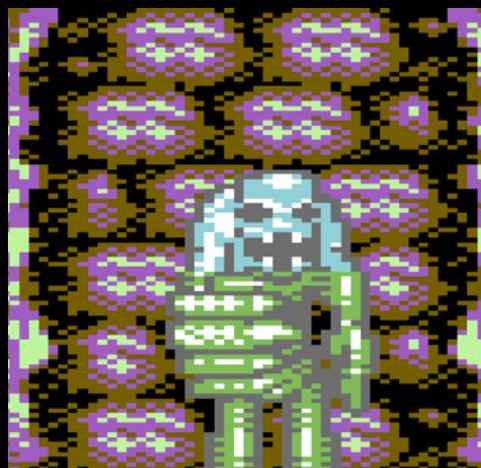


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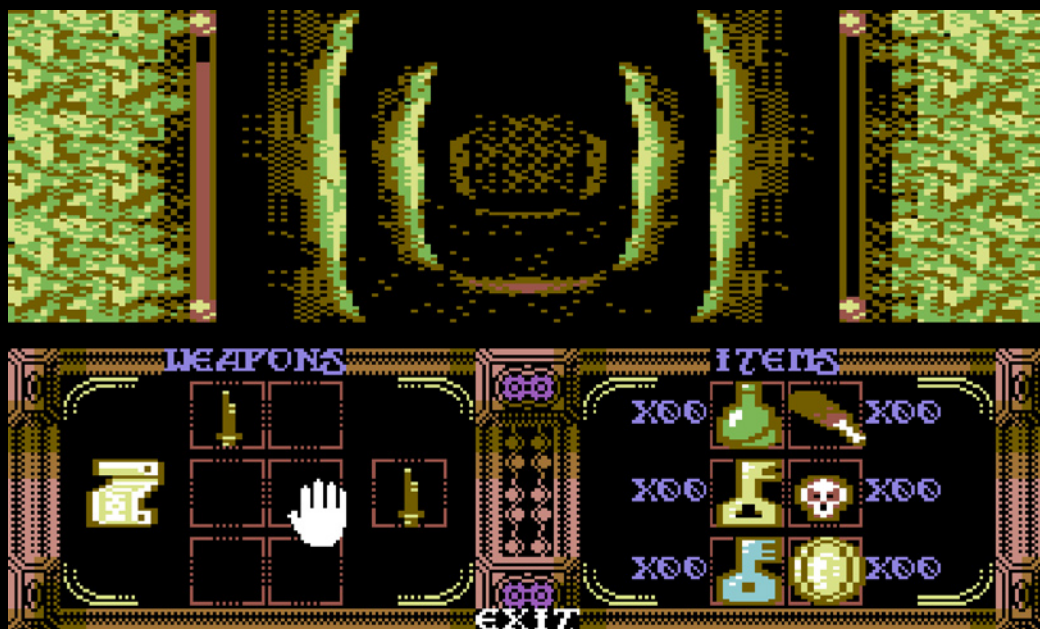


SHILA

First person games that give you a smooth 3D transition between locations are a scarce thing to find on 8bit computers and consoles. Argus for the C64, programmed by Achim Volkers, gives it a shot. And it works quite well. He crammed more than 1.500 locations into the RAM which you not only can, but must explore in order to find everything that will help you achieve your goal: Find the Starchild and defeat Zoran and all the evil monsters with him.



At first, navigating through the world of Argus seems a bit weird, as you will have to get used to the way the surroundings change while you move. And as you can only see what is in front of you, a magic compass shows you all exits to your current position and flashes if something special can be done or found at your location. So although you can rush through a long hallway, it's wiser to go step for step. Also, you may get attacked a lot in those unholy area. So be aware of your surroundings and hit them fast and hit them hard. When beingt attacked, you compass also flashes, but it does not quite indicate from which direction you are being attacked. So sometimes you find yourself turning 270 degrees just to face the enemy and finally strike your blow. Meanwhile, he might have hit you several times. It helps to know that you don't need to turn to exits on your screen, as

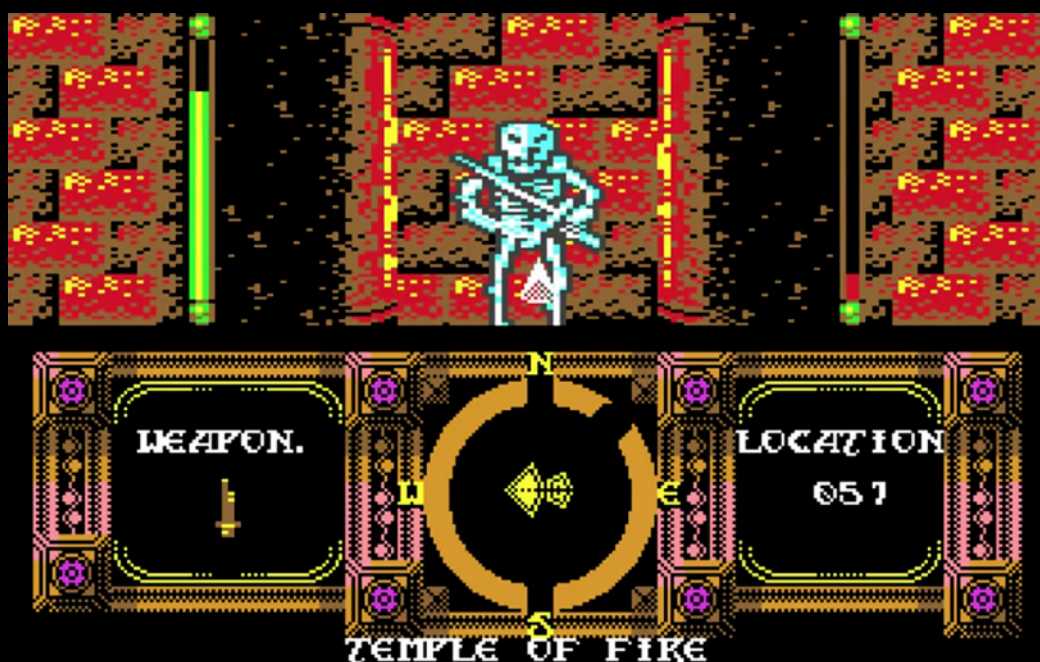


FAR ACROSS THE WESTERN SEA, BEYOND THE HORIZON LIES THE LAND OF ARGUS AND THE KINGDOM OF GRAYFELL, RULED BY THE WISE KING MIDUS.

enemies will most likely attack out of dark spots and not stand in your way. And if you ever get lost in the game, there is thankfully an ingame map, so you don't have to keep track of your ways with pen and paper. You can also save your progress to disk and use the d64 file you'll receive with your purchase from Psytro-

nik with your SD2IEC. The graphics are very nice and the impression of depth turned out well. Thanks to the great artwork of Smila Storey and the atmospheric soundtrack by Saul Cross, you'll find the whole scenario rather fascinating. It's just the right game for a cold winternight.

(bk)



STARFYSH (C64)

Starfysh on the Commodore 64 provides you with a solid space shooter for free!



Richard Bayliss has put out so many games on the Commodore 64 in the last ten or more years, it's difficult to keep track of all of them. If there ever would be a lifetime achievement award for such an output, he would get it for sure.

His latest game, Starfysh, is a space shooter that offers some decent gameplay and enough motivation to make it through to the fourth level – and then try again. And this without any endbosses, satellites or powerups. Just you and your ship against a seemingly endless stream of enemy spacecrafts.

LOOKING GOOD

The very first thing you'll notice are the quite decent graphics. A futuristic looking pilot in his cockpit it just enough to get you excited, and a picture of a spaceship flying into some mysterious nebula does the rest. The game itself also looks quite

decent. It has that modest IO feeling to it, so you don't need hordes of enemies, crazy attack patterns or sprite bombast. Your sleek ships just fly away at what seems to be a reasonable speed for someone flying through enemy territory. All sprites are multicolor and it is notable that all the enemies attack in squadrons, changing their patterns just in front of you. So you have to know which enemies will do what when they come towards you, as you probably won't be able to take out all of them at once.

PLAYABILITY

Fortunately, there is no reason for button mashing, as your ship will keep firing as long as you press the button. The shots are not that fast and each of them has to hit a target first before you can fire another one, resulting in heavy hitting on enemies at close range and rather placid



combat on distance. But it all works just fine. Oh, and one more thing that's really nice: You start out each level with four lives. And before losing one, you can take up to three hits. This really keeps you motivated to play further. And in some levels, it's quite necessary one would say.

As the level design is mediocre, the nice tune and the overall setting will keep you going for some time. Although it's a space game, it's not a stellar experience, but very solid and entertaining. A highscore saver would have sparked the fire even more. Give it a go! (bk)



Level 3 looks quite nice with the skyscrapers in the background and some kind of Scramble-like cave that follows. It is certainly the nicest looking level, though you'll enjoy the Space Taxi atmosphere of level 2 as well.

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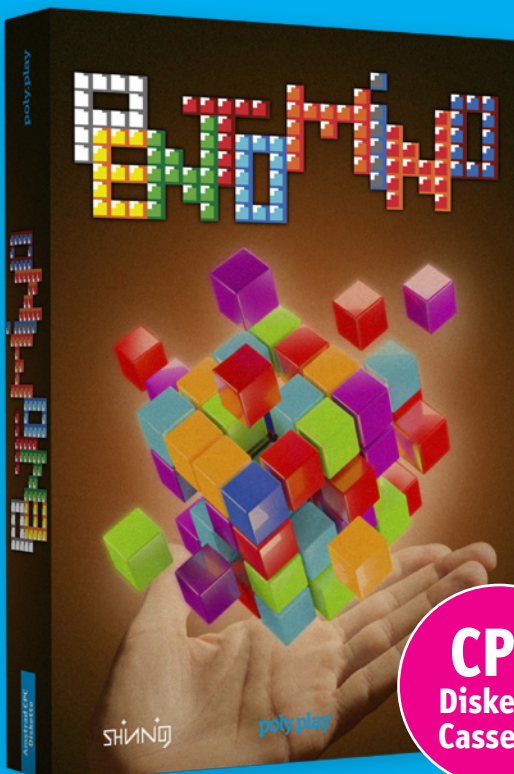
C64
Cartridge
Diskette
Cassette

Rescuing Orc is a jump & slash game, a mixture of platforming and action, with a bit of adventure for good balance.



CPC
Diskette

Domsday Lost Echoes is a high grade graphical text adventure with tons of pixel art and three possible endings.



CPC
Diskette
Cassette

Pentomino is a puzzle-game where you have to solve 464 different puzzles and has a great soundtrack.



CBM II
Diskette

Space Chase is a fast 2-player space shooter with great graphics and fantastic SID sound.

All games comes in a big card box with many extras— let yourself be surprised!

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